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M3 - [01] J1 H4 M312 M332 M321 M280 M344 M380 M391 J172 J173 H482 H483 H484  
M620 N010 N050 N340 N303 N304 N305 N306 N040 H402 M510 J0 H8 M520 J012  
M530 M540 M720 M416 M902

PA - (TOKU ) TOKUYAMA SODA KK

PN - JP51136618 A 19761126 DW197702 000pp

PR - JP19750058697 19750519

XIC - C07C-059/14

AB - J51136618 Tartaric acids are prepd. by reacting maleic acid and H<sub>2</sub>O<sub>2</sub> to obtain cis-epoxysuccinic acid. The cis-epoxysuccinic acid is hydrolysed in the presence of an enzyme (e.g. *Nocardia tartaricans* nov. sp., etc.) at 20-60 degrees C, pH 5-10 (pref. 6-9) to obtain the desired tartaric acid (generally present as a 2 sodium salt). Calcium maleate or a cpd. capable of forming calcium maleate (e.g., maleic anhydride and calcium hydroxide, etc.) is then added to the reaction mixt. at a pH 6.5-9 at  $\geq 100$  degrees C to react with the tartaric acid to ppte. calcium tartrate. The mother liquor after sepg. the calcium tartrate, is recycled to the epoxidation step.

- Since the mother liquor after removal of the calcium tartrate can be recycled within the reaction system without discharging, the reaction can be conducted in a closed system.

IW - TARTARIC ACID PREPARATION MALEIC ACID HYDROGEN PEROXIDE PRECIPITATION  
PRODUCT CALCIUM TARTRATE

IKW - TARTARIC ACID PREPARATION MALEIC ACID HYDROGEN PEROXIDE PRECIPITATION  
PRODUCT CALCIUM TARTRATE

NC - 001

OPD - 1975-05-19

ORD - 1976-11-26

PAW - (TOKU ) TOKUYAMA SODA KK

TI - Tartaric acid prepn. from maleic acid and hydrogen peroxide - with  
pptn. of prod. as calcium tartrate

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